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10/042,602	01/09/2002	Jin-Weon Chang	678-791 (P10044)	7014

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/042,602	CHANG ET AL.	
	Examiner	Art Unit	
	Raymond S Dean	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 11 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 11 April 2002 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 21, 2004 have been fully considered but they are not persuasive.

Regarding Claim 6, Examiner respectfully disagrees with applicants' assertion on Page 2, 4th paragraph of the Remarks "Claim 6 recites controlling transmission power according ...". When the mobile is in soft handoff said mobile will receive TPC commands from all of the base stations in the active set (See Column 7 lines 18 – 19). The base stations in the active set comprise the best base station and the next best base station for communicating with the mobile (See Column 13 lines 14 – 28) thus there will be a TPC command from the next best cell before said cell becomes the next best cell. When the mobile is in soft handoff the signal selection processing portion (48) will enable said mobile station to determine which base station involved in the soft handoff is the next best base station thus there will be a delay time where said mobile station recognizes that the best cell must be changed before it is actually changed (See Figure 6, Column 12 lines 54 – 62, Column 13 lines 14 – 17).

Regarding Claim 10, Examiner respectfully disagrees with applicants' assertion on Page 3, 1st paragraph of the Remarks "Claim 10 recites transmitting a power-down ...". When the mobile station is in soft handoff there will be changes from the current best cell to the next best cell. When the mobile is in soft handoff the signal selection processing portion (48) will enable said mobile station to determine which base station

involved in the soft handoff is the next best base station (See Figure 6, Column 12 lines 54 – 62, Column 13 lines 14 – 17) thus there will be a duration from a point in time where the mobile station recognizes that the best cell must be changed until a point in time where the best cell is actually changed from the current best cell to the next best cell. The base stations of the active set will transmit power control commands to the mobile station during soft handoff. The base stations will measure the quality of the radio links and compare said quality metrics to a threshold (ex. SNR, SIR, FER). The base stations will then, based on whether or not said quality metrics exceed said threshold, transmit power control up/down commands to the mobile station (See Column 2 lines 1 – 10, Column 7 lines 13 – 19).

Regarding Claim 1, Examiner respectfully disagrees with applicants' assertion on Page 3, 3rd paragraph of the Remarks "More specifically, it is respectfully submitted that ...". The base stations will measure the power received from the mobile station and generate up/down power commands based on the measured power on the uplink. The commands will be accumulated to generate an overall power level at which the mobile station needs to transmit. The mobile station will then adjust it's transmit power level to achieve said overall power level. The overall power level enables the mobile station to know the amount of adjustment, which is the power offset, said mobile station needs to make in it's transmit power thus the overall power level is the power offset (See Hulbert, Column 3 lines 37 – 62).

Regarding Claim 11, Examiner respectfully disagrees with applicants' assertion on Page 4, 1st paragraph of the Remarks "With regard to Claim 11 ..." for the same reasons regarding Claim 1 as set forth above.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 6 – 8 and 10 are rejected under 35 U.S.C. 102 (e) as being anticipated by Mohebbi (US 6,603,971 B1).

Regarding Claim 6, Mohebbi teaches a method for controlling uplink transmission power in a handover region by a UE (User Equipment) in communication with a Node B using an FCS (Fast Cell Selection) scheme (Figure 5, Column 6 lines 27 – 31, Column 6 lines 45 – 48, Column 13 lines 14 - 23), comprising the steps of: establishing radio links to a plurality of cells in an active set and recognizing that a best cell must be changed from a current best cell to a next best cell according to states of the established radio links, if the UE enters the handover region during communication with the current best cell (Column 13 lines 14 – 28); and controlling transmission power

according to a TPC (Transmission Power Control) command received from the next best cell for a delay time from a time slot where the UE recognized that the best cell must be changed (Column 9 lines 8 – 19, Column 13 lines 14 – 23, the next best base station is the base station with the best quality uplink signal, the mobile station will adjust it's transmit power based on the transmission power control command transmitted from said base station).

Regarding Claim 7, Mohebbi teaches all of the claimed limitations recited in Claim 6. Mohebbi further teaches wherein the delay time is a time from the time slot where the UE recognized that the best cell must be changed until a time slot where the next best cell first transmits a power-down command as the TPC command (Column 9 lines 8 – 19, Column 13 lines 14 – 23).

Regarding Claim 8, Mohebbi teaches all of the claimed limitations recited in Claim 6. Mohebbi further teaches wherein the delay time is a time from the time slot where the UE recognized that the best cell must be changed until a time slot where the best cell is actually changed from the current best cell to the next best cell (Column 9 lines 8 – 19, Column 13 lines 14 – 23).

Regarding Claim 10, Mohebbi teaches a method for controlling uplink transmission power in a handover region by a UE (User Equipment) in communication with a Node B using an FCS (Fast Cell Selection) scheme (Figure 5, Column 6 lines 27 – 31, Column 6 lines 45 – 48, Column 13 lines 14 - 23), comprising the steps of: establishing radio links to a plurality of cells in an active set; recognizing that a best cell must be changed from a current best cell to a next best cell according to states of the

established radio links, when the UE enters the handover region during communication with the current best cell (Column 13 lines 14 – 28); transmitting a power-down command only when respective states of the radio links for a duration from a point in time where the UE recognized that the best cell must be changed until a point in time where the best cell is actually changed from the current best cell to the next best cell, is larger than or equal to a preset threshold; and transmitting a power-up command when any one of the radio links has a state value lower than the threshold (Column 9 lines 8 – 19, Column 13 lines 14 – 23, quality of the uplink is the threshold).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 – 5, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mohebbi (US 6,603,971 B1) in view of Hulbert (5,574,972).

Regarding Claim 1, Mohebbi teaches a method for controlling uplink transmission power in a handover region by a UE (User Equipment) in communication with a Node B using an FCS (Fast Cell Selection) scheme (Figure 5, Column 6 lines 27 – 31, Column 6 lines 45 – 48, Column 13 lines 14 - 23), comprising the steps of: storing TPC (Transmission Power Control) commands received for a specific duration from a

plurality of cells in an active set, if the UE enters the handover region during communication with a current best cell (Column 7 lines 13 – 24); determining, when a next best cell is selected from the plurality of the cells (Column 6 lines 66 – 67, Column 7 lines 1 – 2, the highest ranked base station will be the next best cell selected).

Mohebbi does not teach a transmission power offset by comparing TPC commands from the current best cell with TPC commands from the next best cell for the specific duration at a point in time where the best cell is changed from the current best cell to the next best cell; and transmitting initial transmission power for the next best cell at a transmission power level determined considering the transmission power offset.

Hulbert teaches a transmission power offset by comparing TPC commands from the current best cell with TPC commands from the next best cell for the specific duration at a point in time where the best cell is changed from the current best cell to the next best cell (Column 3 lines 59 – 67, Column 4 lines 1 – 12, the overall power level is the offset); and transmitting initial transmission power for the next best cell at a transmission power level determined considering the transmission power offset (Column 3 lines 59 – 67, Column 4 lines 1 – 12, this is an inherent characteristic of the power control system).

Mohebbi and Hulbert both teach a CDMA system that incorporates soft handoff and uplink power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transmission offset method taught in Hulbert in the CDMA system of Mohebbi for the purpose of enabling uplink power control on a frame by frame basis.

Regarding Claim 2, Mohebbi in view of Hulbert teaches all of the claimed limitations recited in Claim 1. Hulbert further teaches wherein the transmission power offset is calculated by P sub offset = 2 x Sigma sub duration sub 1(UE sub down) for the duration from a point in time where the best cell is changed until a time slot just next a time slot indicating that the TPC command indicates a power-down command, where P sub offset represents the transmission power offset, duration sub 1 represents the specific duration, and UE sub down represents a number of power-down commands among the TPC commands transmitted by the current best cell during the specific duration (Column 3 lines 59 – 67, Column 4 lines 1 – 12, since there is an accumulator there will be a summation of up/down signals thus the above equation is inherent in the uplink power control system).

Regarding Claim 3, Mohebbi in view of Hulbert teaches all of the claimed limitations recited in Claim 1. Hulbert further teaches a duration of a predetermined number of time slots of the next best cell from a point in time where the best cell is changed from the current best cell to the next best cell (Column 3 lines 59 – 67, Column 4 lines 1 – 12, since this is a frame based system there will be a duration of a predetermined number of time slots thus this is an inherent characteristic).

Regarding Claim 4, Mohebbi in view of Hulbert teaches all of the claimed limitations recited in Claim 1. Mohebbi further teaches UTRAN sub up - UTRAN sub down UTRAN sub up represents a number of power-up commands among the TPC commands transmitted from the next best cell to the UE, UTRAN sub down„ represents a number of power-down commands among the TPC commands transmitted from the

next best cell to the UE (Figure 5, Column 6 lines 27 – 31, Column 7 lines 13 – 24, since this is a WCDMA system a UTRAN is inherent). Hulbert further teaches wherein the transmission power offset is calculated by P sub offset = Sigma sub duration sub 2(UE sub up – UE sub down) P sub offset represents the transmission power offset, duration sub 2 represents the specific duration, UE sub up represents a number of power-up commands among the TPC commands transmitted by the current best cell, and UE sub down represents a number of power-down commands among the TPC commands transmitted by the current best cell (Column 3 lines 59 – 67, Column 4 lines 1 – 12, since there is an accumulator there will be a summation of up/down signals thus the above equation is inherent in the uplink power control system).

Regarding Claim 5, Mohebbi in view of Hulbert teaches all of the claimed limitations recited in Claim 1. Hulbert further teaches wherein the transmission power offset is set to `0' if the TPC command transmitted on a time slot before a point in time where the best cell is changed is a power-down command, and the transmission power offset is set to a preset value if the TPC command transmitted on the time slot before a point in time where the best cell is changed is a power-up command (Column 3 lines 59 – 67, Column 4 lines 1 – 12, since the accumulated up/down signals are used to create an overall level which controls the uplink power this is an inherent characteristic of the uplink power control system).

Regarding Claim 9, Mohebbi teaches all of the claimed limitations recited in Claim 6. Mohebbi further teaches a delay time (Column 13 lines 14 – 23); decreasing transmission power if the TPC commands received from the current best cell and the

next best cell are both power-down commands; and increasing transmission power if any one of the TPC commands received from the current best cell and the next best cell is a power-up command (Column 9 lines 57 – 63, if the highest ranked base station requests a power decrease there will be a power decrease regardless of whether any other base station requested said power decrease, there will be a power increase if said highest ranked base station requests a power increase).

Mohebbi does not teach comparing a TPC command received from the current best cell with a TPC command received from the next best cell for a time duration until a point in time where the UE finally transmits information to the current best cell.

Hulbert teaches comparing a TPC command received from the current best cell with a TPC command received from the next best cell for a time duration until a point in time where the UE finally transmits information to the current best cell (Column 3 lines 59 – 67, Column 4 lines 1 – 12).

Mohebbi and Hulbert both teach a CDMA system that incorporates soft handoff and uplink power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the comparison method taught in Hulbert in the CDMA system of Mohebbi for the purpose of enabling uplink power control on a frame by frame basis.

Regarding Claim 11, Mohebbi teaches an apparatus for controlling uplink transmission power in a handover region by a UE (User Equipment) in communication with a Node B using an FCS (Fast Cell Selection) scheme (Figure 5, Column 6 lines 27 – 31, Column 6 lines 45 – 48, Column 13 lines 14 – 23), comprising: a power measure

and best cell identification part for measuring transmission power of a received common pilot channel (CPICH) signal (Column 12 lines 64 – 67, Column 13 lines 1 – 13, since this is a CDMA system there is an inherent CIPCH), and creating best cell maintain/change information by determining whether to maintain a current best cell or change the current best cell to a next best cell (Column 13 lines 14 – 23); a demultiplexer for demultiplexing shared control channel (SHCCH) signals received from a plurality of Node Bs in an active set and outputting TPC (Transmission Power Control) commands; a TPC command memory for storing the TPC commands output from the demultiplexer, received from the plurality of the Node Bs (Column 7 lines 13 – 24, since this is a CDMA system there is an inherent SHCCH, in order to obtain the power control bits there must be demultiplexing in the mobile station thus there is an inherent demultiplexer);

Mohebbi does not teach a UE transmission power controller for determining a transmission power control offset based on TPC commands stored for a specific duration from a point in time where the best cell is changed from the current best cell to the next best cell, upon receipt of best cell change information indicating that the best cell must be changed from the current best cell to the next best cell, output from the power measure and best cell identification part, and then compensating initial transmission power for the next best cell based on the determined power control offset.

Hulbert teaches a UE transmission power controller for determining a transmission power control offset based on TPC commands stored for a specific duration from a point in time where the best cell is changed from the current best cell to

the next best cell (Column 3 lines 59 – 67, Column 4 lines 1 – 12, the overall power level is the power offset), upon receipt of best cell change information indicating that the best cell must be changed from the current best cell to the next best cell, output from the power measure and best cell identification part, and then compensating initial transmission power for the next best cell based on the determined power control offset (Column 3 lines 59 – 67, Column 4 lines 1 – 12, the compensation of the initial transmission power for the best base station based on the determined overall power level is an inherent characteristic).

Mohebbi and Hulbert both teach a CDMA system that incorporates soft handoff and uplink power control thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transmission power controller taught above in Hulbert in the CDMA system of Mohebbi for the purpose of enabling uplink power control on a frame by frame basis.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NICK CORSARO
PRIMARY EXAMINER

Raymond S. Dean
January 27, 2005